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EXAMINER

TARAZANO, D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1773     | 19           |

DATE MAILED: 09/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

|                      |                |  |
|----------------------|----------------|--|
| Application No.      | AHLGREN ET AL. |  |
| 08/996,367           |                |  |
| Examiner             | Art Unit       |  |
| D. Lawrence Tarazano | 1773           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on \_\_\_\_\_.  
2a) This action is FINAL. 2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-72 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_ is/are allowed.  
6) Claim(s) 1-72 is/are rejected.  
7) Claim(s) \_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.  
12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.  
14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.  
15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.  
4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other:

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**DETAILED ACTION**

***Claim Rejections - 35 U.S.C. § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-72 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is unclear where the applicants have support for claiming weight percent of the homogeneous ethylene polymer in the entire film..

***Claim Objections***

3. Applicants are advised that should claim 65 be found allowable, claims 66-72 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

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***Claim Rejections - 35 U.S.C. § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

5. Claims 1-5, 8, 9, 13, 14, 15, 36, 41, 42, 57, 60, 61, and 63 are rejected under 35 U.S.C. 102(e) as being anticipated by Ralph (5,272,016).

Ralph teaches shrinkable three layer films comprising a core layer and surface layers comprising a blend of:

- a) VLDPE (Dow XU61520.01, a heterogeneous ethylene/ alpha-olefin copolymer having a density of 0.912), corresponding to the claimed heterogenous copolymer having a density of above about 0.90 g/cc;
- b) a Plastomer (Tafmer A 4085, an ethylene copolymer having a density of 0.88 g/cc) corresponding to the claimed heterogeneous copolymer having a density of less than about 0.90 g/cc); and
- c) a homogeneous ethylene / butene copolymer having a density of 0.900 g/cc (EXACT 3010C), ( see examples 4, 25 and 26). Ralph further teaches that materials having a value of about 0.900 g/cc are useful (claim 27). This copolymer corresponds to the claimed homogeneous component having a density of at least 0.902 g/cc. The claimed value falls within the “**about** 0.900 g/cc” taught in the prior art. This is merely a 0.2% difference in values.

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The applicants claim that the homogeneous ethylene component is present in a range of 15-100% by weight. The examiner notes that Example 25 in Ralph shows surface layers having 32% by weight EXACT, the homogeneous ethylene polymer in question. The relative thickness of the two surface layers is 0.15 /30/15 (mil). Therefore, the two surface layers together make up one-half the weight of the film, which translates to a the EXACT material making up about 16% of the film according to the example.

Regarding the limitation that the films are cooled by water during formations, this is a process limitation. There is nothing on the record and no recognition in the applicants specification that a film formed by this process would be different in structure from a heat shrinkable film made by any other method; (page 10, starting at the last paragraph of the specification) all methods would appear to produce the same product.

For these reasons, the claimed films are clearly envisaged by Ralph.

***Claim Rejections - 35 U.S.C. § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-15, 36, 42, and 56-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ralph 5,272,016.

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Ralph as discussed above teaches a multi layer biaxially oriented shrink film comprising homogeneous polyolefins (EXACT, a metallocene catalyzed ethylene/butene copolymer available from Exxon, (column 22, line 45; Certificate of Correction)). These are the same types of polymers used by the applicants.

While Ralph does not teach examples of films having a density of greater than "about 0.902 g/cc", the claimed densities would overlap the "about .900 g/cc" taught by Ralph.

Furthermore, there does not appear to be any distinction in the behavior of a films having a resin having a density of greater than "0.902 g/cc" and films having a density in the range of about "0.900 g/cc". The values are very close and the applicants have shown no criticality to the claimed end point. The term "about" gives a reasonable amount of latitude to a value and the examiner takes the position that a value of "0.902 g/cc" is covered by the term "about 0.900 g/cc".

Regarding claim 7, while Ralph describes VLDPE materials as being copolymers of ethylene and an alpha-olefin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have also used homopolymers for this component as long as the density requirements set forth in Ralph were met.

Regarding claims 10, 11, 58 and 59, Ralph teaches that VLDPE is a copolymer of ethylene; and butene, hexene, or octene (column 4, lines 35+). The specific homogeneous linear ethylene copolymer EXACT resin used by Ralph, is an ethylene / butene copolymer. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used homogeneous linear single site catalyzed ethylene copolymers having hexene or octene comonomers

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in the films taught by Ralph since this is merely the substitution of one comonomer for another, in which each of these alpha olefins have the same function.

Regarding claims 15 and 62 second surface layer can be considered an inner layer in view of the applicants structures in the examples.

7. Claims 43-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ralph 5,272,016 in view of the applicants' admissions page 10, paragraph 3.

Ralph, as discussed above, teach oriented films; however, he is silent regarding some of the processing conditions under which orientation occurs. However, the applicants state on page 10 that orientation methods are well known to those skilled in the art, including using cascading water cooling means.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used conventional orientation methods of the types discussed by the applicants as being well known to those in the art in order to produce the shrinkable films taught by Ralph.

Regarding claims 53 and 54, the films are irradiated before or after biaxial orientation as claimed.

Regarding claims 50-52, determining the optimal temperature of orientation is well within the skill of the art since this feature relates to the temperature of crystallization of the resins in the polymer film (column 2, lines 1+). The films taught by Ralph shrink at a temperature of 90 °C. While

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the orientation temperature is not specified, since the temperature of orientation is related to the temperature at which shrinkage occurs, the orientation must have taken place at a temperature near 90 °C such that shrinkage would occur at that temperature. In any event, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the orientation temperature of the films taught by Ralph depending on the crystallinity of the polymers used.

8. Claims 1, 2, 3, 5, 6, 8-13, 36, 42-49, 53, 56, and 57-64 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schoenberg (4,551,380) in view of Schut "Enter a new Generation of Polyolefins" Nov. 1991 Plastics Technology and Van der Sanden et al. "EXACT Linear Polymers of Enhanced Sealing Performance" ANTEC 1992 and applicants' admissions on page 10+ regarding conventional methods of film orientation.

Schoenberg teach a heat sealable shrinkable symmetric three layer laminate film comprising a core of linear low density polyethylene (density about 0.90 g/cc) bounded by two surface layers (column 1, line 6). The surface layers comprise a blend of: (1) linear low density polyethylene (LLDPE) , (2) a linear medium density polyethylene, and (3) an ethylene/vinyl acetate copolymer (Claim 3). The LLDPE used has a density about 0.900 to 0.925 g/cm<sup>3</sup> (column 8, lines 45-50). Furthermore, the film can be cross linked by irradiation (column 15, line 5+) and orientation of the film can occur using conventional methods such as tenter framing and double bubble methods

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(column 2, lines 1-18). However, Schoenberg does not teach the use of polyolefins produced using a single site metallocene catalyst.

Schut teaches in a trade journal article that Exxon is producing a new line of linear low density polyolefins made using homogeneous single site metallocene catalysts, wherein said polyolefins have a density of at least 0.90 g/cc. Schut also teaches that these polymers would be used in blends or multi-layer films. These polyolefins have physical characteristics far superior to traditional polyolefins produced from Ziegler / Natta catalysis. For example: metallocene catalyzed polyolefins have lower heat-seal initiation temperatures, higher strength (Dart impact results), and better clarity. The superior attributes of these metallocene catalyzed polyolefins are further elaborated in Van der Sanden et al; and they further teach that these polyolefins are a choice material in the production of heat sealable films. Finally it should be noted that metallocene catalyzed polyolefins (1-butene or 1-hexene / ethylene copolymers) are commercially available from Exxon in the form of "EXACT" and ethylene / octene copolymers produced by metallocene catalysis would also fall within this class of materials.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used commercially available metallocene catalyzed LLDPE of the type taught by Schut and Van der Sanden et al. in the laminate structure of Schoenberg in order to produce clear puncture resistant films with improved sealability and strength.

Regarding claims 42-49, 53, and 56, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have produced the films taught by Schoenberg using

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conventional art recognized orientation methods since Schoenberg recognizes that various conventional methods would be useful. That would include the use of water cooling means, stated by the applicants as being conventional methods used in the production of heat shrinkable films

9. Claims 1, 2, 12, 13, 18-41 and 56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Evert et al. (5,055,328) in view of Schut "Enter a new Generation of Polyolefins" Nov. 1991 Plastics Technology and Van der Sanden et al. "Exact Linear Polymers of Enhanced Sealing Performance" ANTEC 1992.

Evert et al. teach a multi layer cross linked laminate film comprising a core sandwiched between an inner layer and an outer layer. The heat sealable inner and outer layers comprise (column 7, line 1+; column 8, line 62+) a blend of at least 50% EVA and other suitable polymers and copolymers including  $\alpha$ -olefins such as LLDPE and VLDPE. The heat sealable layer may also comprise polypropylene, ethylene-polypropylene copolymer, or an ionomer (neutralized ethylene-acrylic acid polymer).

The core (column 8, line 29) can comprise nylon, hydrolyzed ethylene/vinyl acetate copolymer, vinylidene chloride/vinyl chloride copolymer, or vinylidene chloride/methyl acrylate copolymer, but the vinylidene chloride/vinyl chloride copolymer is not a preferred material because it discolors during irradiation treatment. These films are shrinkable at 90 °C, and as discussed above it is reasonable to believe that these films have been oriented at a temperature near 90° C. The films have also been oriented using a double bubble method and irradiated following the orientation step

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(column 10, lines 18+). They also teach in the back ground of the invention that multilayer films can be produced by lamination or extrusion coating, but these methods require additional steps (column 2, lines 50+). However, Evert et al. does not specify the use of LLDPE produced by metallocene.

As discussed above Van der Sanden et al. and Schut teach that commercially available metallocene catalyzed LLDPE have physical properties far superior to those of analogous LLDPE formed by Ziegler-Natta catalysis.

Nevertheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used commercially available metallocene catalyzed LLDPE as discussed by Van der Sanden and Schut in the laminate structure of Evert et al. in order to produce clear films with superior strength and improved heat sealability.

10. Claims 1, 2, 12-15, 18-22, 23-27, 28-31, 33-41, and 65-72 are rejected under 35 U.S.C. § 103 as being unpatentable over Newsome et al. (4,457,960) in view of in view of Schut "Enter a new Generation of Polyolefins" Nov. 1991 Plastics Technology and Van der Sanden et al. "Exact Linear Polymers of Enhanced Sealing Performance" ANTEC 1992.

Newsome et al. teach multi layer films comprising a barrier layer. The film structure can have both three layer and five layer embodiments; wherein the five layer structure can be either symmetrical or asymmetrical (Examples of the laminate structure: column 7, line 64+), and the films must be strong and abuse resistant. The films can also comprise LLDPE which can compose the core, the

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inner layers, or the outer layers of the films either as a separate layer or as a blend depending on the embodiment. The barrier layer can be either ethylene/vinyl alcohol or saran. Newsome also teaches that LLDPE can be used as a major component in the production of the film, (column 7, lines 9-13) and the amounts used would be within the claimed range. However, Newsome et al. do not teach the use of metallocene catalyzed LLDPE.

As discussed above Van der Sanden et al. and Schut teach that commercially available metallocene catalyzed LLDPE have physical properties far superior to that of analogous LLDPE formed by Ziegler-Natta catalysis. Furthermore, Schut teaches that EXXPOL EXACT-101 has a total impact strength of 107 in.-lb.

It would have been obvious to one of ordinary skill in the art at the time of invention was made to have used commercially available metallocene catalyzed LLDPE of the type taught by Van der Sanden et al. and Schut in the laminate structure of Newsome in order to produce films with superior strength and performance.

11. Claims 1, 3, 4, 5, 6, 12, 14, 28, 35, 42, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilhoit (5,403,448).

Wilhoit teach that blends of VLDPE, EVA, and a plastomer are used to produce heat shrinkable single and multi-layer films. These films are biaxially oriented as by double bubble biaxial orientation in which irradiation to achieve cross linking is done following biaxial orientation (column

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11, lines 50+). The homogeneous plastomer has a density of below about 0.900 g/cc and a molecular weight distribution of less than 3; (table on column 5) this would correspond to the claimed linear homogeneous polymer. These materials are made by Mitusi using a single site vanadium catalyst and have homogeneous not heterogeneous properties.

The VLDPE polymers used are heterogeneous in nature (table column 5), having molecular weight distributions above about three and having at least two melting points. Examples of VLDPE polymers recited have densities of both less and greater than about 0.90 g/cc as claimed (Table C).

The essential difference between what is claimed and what is taught by Wilhoit is the specific use of homogeneous linear polymer (plastomer) having a density of greater than about 0.901 g/cc. However, the claimed ranges overlap that taught by Wilhoit because both the prior art and the applicants use the term about which gives enough latitude to the densities of the homogeneous polymer to have overlapping values. Accordingly, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made, since it has been held that choosing the over lapping portion, of the range taught in the prior art and the range claimed by the applicants, has been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. Furthermore, it has been held that a range of "more than 5%" would over lap a disclosure of 1-5%, *In re Wertheim*, 541 F. d. 257, 191 USPQ (CCPA 1976), *In re Woodruff*, 919 F.d. 1575, 16 USPQ2d. 1934 (Fed. Cir. 1990).

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12. Claim 1, 2, 6-11, 15-17, 42, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al. (4,532,189) in view Schut "Enter a new Generation of Polyolefins" Nov. 1991 Plastics Technology and Van der Sanden et al. "Exact Linear Polymers of Enhanced Sealing Performance" ANTEC 1992.

Mueller et al. teach heat shrinkable multi-layer films comprising LLDPE wherein DOWLEX 2054 is a commercially available LLDPE (examples I, II, and III). Moreover, example II shows LLDPE blended with ethylene vinyl acetate used in the core layer of a multilayer film. Furthermore, these films have improved optical properties (column 1, lines 13+). The core layer can also comprise a blend of LLDPE and LDPE, (an example of a homopolymer)(column 5, lines 22; column 3, line 54). These films are also used in shrink/ heat seal applications (column 2, lines 5+).

However, they are silent regarding the use of homogeneous linear polymers having a density of greater than about 0.901 g/cc.

Schut teaches in a trade journal article that Exxon is producing a new line of linear low density polyolefins made using homogeneous single site metallocene catalysts, wherein said polyolefins have a density of at least 0.90 g/cc. These polyolefins have physical characteristics far superior to traditional polyolefins produced from Ziegler / Natta catalysis. For example: metallocene catalyzed polyolefins have lower heat-seal initiation temperatures, higher strength (Dart impact results), and better clarity. The superior attributes of these metallocene catalyzed polyolefins are further elaborated in Van der Sanden et al., and they further teach that these polyolefins are a choice material in the production of heat sealable films. Finally it should be noted that metallocene catalyzed

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polyolefins (1-butene, 1-hexene, or 1-octene /ethylene copolymers) are commercially available from Exxon in the form of "EXACT."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used commercially available metallocene catalyzed LLDPE of the type taught by Schut and Van der Sanden et al. in the surface layers or the core layer of the laminate structure of Mueller in order to produce clear puncture resistant films with improved strength and in the case of the surface layer, improved heat sealing properties.

*Response to Arguments*

13. Applicants' arguments filed 6-22-2001 have been fully considered but they are not fully persuasive.

14. **REGARDING THE CLAIMED DENSITY OF "at least 0.902 g/cc":**

The applicants argue that their newly claimed range of at least 0.902 g/cc is neither anticipated nor obvious over Ralph who teaches materials having a density of "about 0.900". The examiner disagrees. The applicants argue that the term "about" should only give the value of 0.900 g/cc a range of 0.8995 to 0.9005. This logic is flawed; these are the range of values which are inherently covered by the value of 0.900 due to rounds the density to three significant figures. The term "about" gives the a reasonable amount of latitude to a term, and this would be greater than the range argued by the applicants. The courts have held that the term about should be given reasonable

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amount of latitude, which is far beyond the applicants' limited interpretation. In *Lolene Corporation et al V. Motor City Metal Treating Inc*, 169 USPQ 77 (CA 1971), a range of 46 to 50% was found to infringe a range of about 25 to 40%. As a upper limit, in *Conopco Inc v. May Department Stores Co.* 32 USPQ2d 1225, the courts found that it was **unreasonable** to interpret the term "about" to encompasses a four-fold increase in a component. The prior art teaches an example having a value of 0.900 g/cc and the applicants claim a minimum value of 0.902, there is only a 0.2% difference in the values. The differnce in these values is very small and the examiner maintains the position that a value of 0.902 g/cc would be included in the range encompassed by the phrase "about 0.900 g/cc" taught by Ralph. Furthermore, the applicants have not established any criticality regarding a value of at least 0.902, over the 0.900 g/cc value taught in the Ralph.

#### **15. REGARDING THE MELT STRENGTH OF THE HOMOGENEOUS POLYMERS:**

The applicants that the melt strength of the homogeneous polymers make them difficult to process. However, the applicants' arguments regarding the melt strength of the polymers is not convincing for the following reasons.

The applicants have argued that the materials produced by Exxon do not lend themselves to the production of mono-layer films because of melt strength considerations. However, the applicants' claims are not limited to monolayer films consisting of the homogeneous linear ethylene polymer.

Shut teaches that initial uses of these materials would be layers and blends (page 17, column 3).

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The prior art, Ralph, uses the EXACT resins as minor component in blends so the melt strength issue is diminished by the presence of other ethylene resins.

The applicants claims are directed to films which are either multilayer in nature or open to the presence of other polymers or layers. This is not unlike the structures taught in the prior art. Thus, the applicants' arguments with respect to melt strength are not commensurate with scope of the claims which are not so limited.

#### **16. REGARDING THE METHOD USED TO MAKE FILMS COMPRISING HOMOGENEOUS POLYMERS:**

At the time the invention was made there was no recognition that there was any criticality to the method used to produce the films. The applicants now state that the water cascading method is better than the other methods.

While the applicants added the limitation that the films are cooled by cascading water, there is nothing on the record to establish any criticality to this method. The applicants state on page 10 that the films of their invention can be made by various conventional methods. Thus, there is no recognition in the specification that the cascading water method results in a materially different and non-obvious product or that the method itself is special. For example, films can also be formed into a platen and then oriented by tenter framing (examples 1-10).

#### **17. SHRINKABLE FILMS COMPRISING HOMOGENEOUS POLYMERS:**

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The applicants argue that Shut and Van der Sanden do not recognize that homogeneous polymers are specifically useful in shrink film applications; however, Shut and Van der Sanden do teach that they are useful in the production film and would be useful in blend and in multilayer films. Newsome (4,457,960), Schoenberg (4,551,380), Evert et al. (5,055,328) and Mueller (4,532,189) all teach multilayer films which have shrinkable properties and the motivation to combine is based on the fact that each of these primary references teaches multilayer films and blend.

The applicants' arguments with respect to increased shrink properties is not persuasive. It is recognized in the art when comparing two polymers having the same density one made by Ziegler / Natta and one made by a single site catalysis (EXACT) (Enter a New Generation of Polyolefins, Shut, table 1), the homogeneous polymer made by single site catalysis will have a lower melting point. This lower melting point will allow the homogeneous material to be oriented at a lower temperature and the lower orientation temperature will allow the film to shrink at a lower temperature. Therefore, film made from the homogeneous polymer would inherently have a higher degree of shrinkage. The material can be oriented at a lower temperature which results in a greater degree of shrinkability at the same temperature because of this increased temperature differential; See also Ralph (5,272,016) which discusses orientation temperatures (column 2, paragraph 1).

The applicants state that they have improved impact strength in structures having homogeneous polymers and that Ralph shows a decrease in strength. However, Shut teaches that impact strength is increased for materials made from homogeneous ethylene polymer.

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In the interview dated 10/10/2000, the applicants stated that the length of the side chain relates to the strength of the films both in the molten state and as fully formed because the side chains tangle and result in added strength. However, since the specification shows no preference for one comonomer vs. another; it appears that the three to ten carbon number alpha-olefins are functionally equivalent. There was no recognition that at the time the invention was made that one monomer was superior or had unexpected properties over another.

**18. REGARDING THE COMONOMERS USED:**

The applicants state that Ralph uses ethylene-butene ( $C_2/C_4$ ) copolymers and that there is no teaching that other monomers can be used.

One having ordinary skill in the art would know and understand the relationship between LLDPE (linear low density polyethylene) and homogeneous ethylene / alpha-olefin polymers. Both are ethylene alpha-olefin copolymers in which the alpha olefin is added as a comonomer to adjust the density of the material. The alpha-olefin comonomer disrupts the crystal lattice and lowers the density of the material, in which a higher comonomer content translates to a lower density. LLDPE and the homogeneous ethylene-alpha olefin copolymers are both linear materials. However, the use of a single site catalyst in the later results in a more uniform product. The comonomer in each provides the same function so it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used other alpha-olefin comonomers since each of these comonomers can be used.

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Ralph describes how all the VLDPE, LLDPE, and ethylene plastomers that they use are ethylene/ alpha-olefin copolymers (Column 4, lines 35 to Column 5, line 24). They also describe the comonomers used (column 4, line 35+), and they state that such materials have densities in the range of 0.86 to 0.914 g/cc. They also included the EXACT polymers (homogeneous ethylene/ alpha olefin copolymers claimed) in their description of the VLDPE materials used. Claim 27 clearly states that the VLDPE comprises a blend of two ethylene alpha-olefin copolymer, and claim 29 clearly states that one of these materials is the EXACT materials. Ergo, it is reasonable to use Ralph's' disclosure of monomers which are useful in the production of VLDPE to be the same those used in the production of the new generation of homogeneous ethylene/ alpha-olefin copolymer and that the density of such materials should be interpreted according to the same criteria.

While the applicants argue that the Certificate of Correction describing the EXACT resins in Ralph constitutes new matter and that the examiner therefore the examiner can not rely on this information. The examiner maintains that the specification as discussed above clearly shows that Ralph included the homogeneous resins in his description of the VLDPE materials.

### *Conclusion*

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. L. Tarazano whose telephone number is (703)-308-2379. The examiner can normally be reached on 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on (703)-309-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9310 for regular communications and (703)-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0661.

D. Lawrence Tarazano  
September 5, 2001



  
Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700